



# Sun<sup>(TM)</sup> Infrastructure Solution for Secure Network Access Platform

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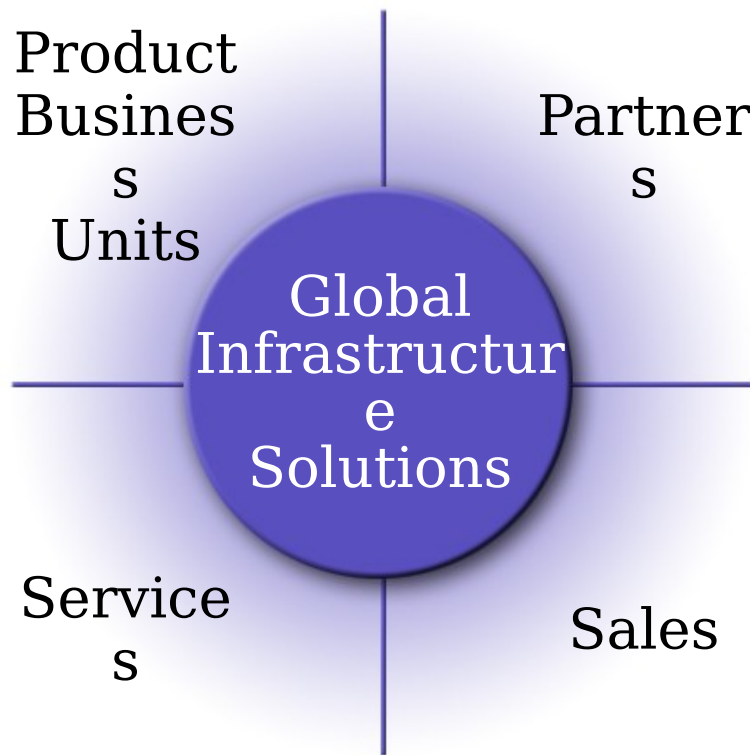
# Sun's Commitment

To Provide  
Infrastructure Technologies and Products  
for Secure Network Computing

# This Solution's Objectives

- Build technical and business foundation for partners on a Sun Infrastructure platform
  - Create a Trusted Solaris Ultra Thin Client Partner Ecosystem
- Provide an evolutionary solution
  - Based on certified parts that speed up overall final integrated solution deployed accreditation
- Build People infrastructure to support Customers
  - Business and Service People
  - Development and Sustaining Engineering
- Leverage Sun's leadership and expertise in secure ultra-thin network-centric platforms into commercial environments

# Sun's Infrastructure Solutions Strategy



To leverage all resources of Sun to change the rules of the game; enabling customers to focus on business process while Sun and our partners make their infrastructure work

As an example: Technical relationship with JEDI

# Mobility with Security: Ultra-Thin Client Front-End

## Before:

To ensure a high level of security physically isolated clients were deployed often resulting in up to 10 different Desktops in a single office.



## After:

Full Session Mobility enabled by a single stateless Sun Ray<sup>(TM)</sup> front-end and protected by a Trusted Solaris<sup>(TM)</sup> based back-end



# Solution Innovation through Customer Collaboration



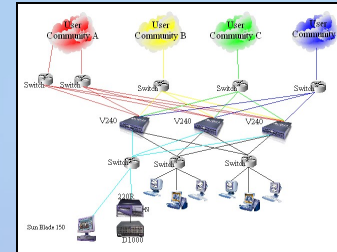
## Collaboration

JICPAC  
Collaborative POC with  
Department of Defense  
Joint Intelligence Center  
of the Pacific



## Innovation

DTW  
DoDIIS Trusted Workstation  
Program



## Proven Design (JEDI)

Sun Secure  
Network Access Platform  
Reference Architecture



Compelling Value  
Sun Infrastructure Solution  
Secure Network Access  
Platform



# Training and Information Resources

- Sun Educational Services
  - Most in-depth technical training via:
    - SC-325: Trusted Solaris [tm] System Administration
    - ISC-412: Trusted Solaris Software Workshop with Sun Ray Module (SC-325 is prereq)
- Information Resources
  - Trusted Solaris 8 HW 07/03 Answerbook™, Sun Ray Server Software 2.0 documentation (docs.sun.com)
  - White papers
  - Sun BluePrints™
  - Reference Architecture Docs



# Security Everywhere

JavaCard™



Sun Ray™



Network  
Security



Trusted  
Solaris™





# What Is Trusted Solaris?



**SOLARIS™**

**Trusted Solaris™**

A security-enhanced version of Solaris with additional access control policies

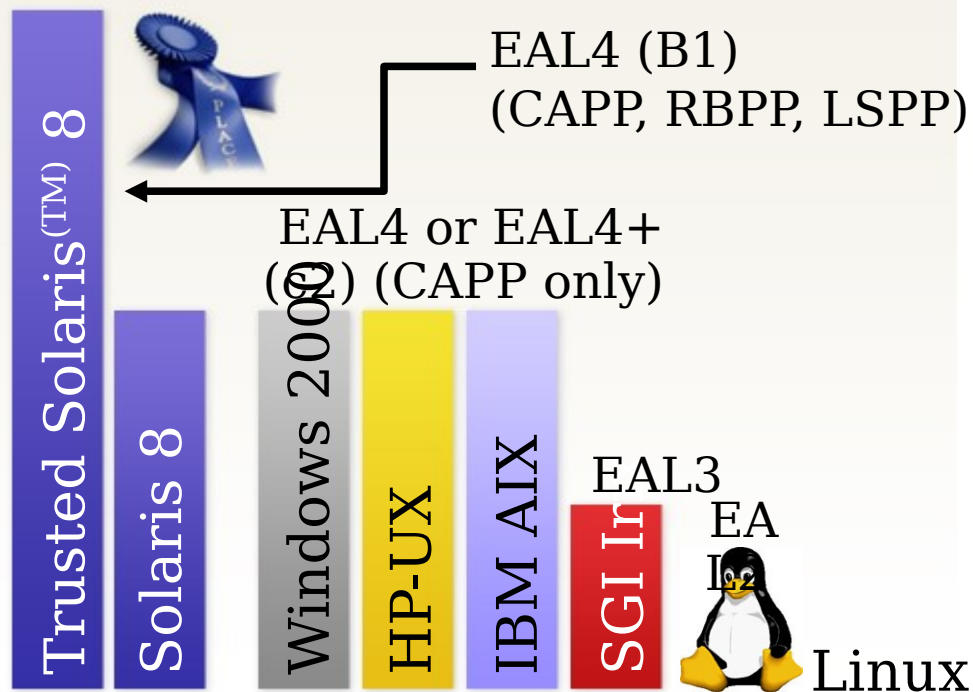
Implements label-based security with hierarchical and compartmented modes

Implements Role-Based Access Control and the Principle of Least Privilege

Provides a trusted multilevel desktop for workstations and ultra-thin clients

Has the most complete set of trusted functionality of any certified OS

# Trusted Solaris<sup>(TM)</sup> Is Certified as the Industry's Most Secure Operating Environment



Based on data from

<http://www.commoncriteria.org/cc/cpl/productType/eplinfo.jsp?id=4>

Only OS Certified with EAL4 and 3 Protection Profiles in EAL4:

CAPP: Controlled Access Protection Profile (Ensures proper login)

RBPP: Role-based Protection Profile (Role-based access control allows the system administrator to define roles based on job functions within an organization. The administrator assigns privileges to those roles)

LSPP: Labeled Security Protection Profile (All data and application components are

formally labeled addressed, and tracked through role

# Role-Based Access Control

- Higher accountability
- Mitigates risk for programs that run as root
- Different roles for different tasks

Standard UNIX® Systems Trusted & Solaris 8 Systems

TASK	USER
Web	ROOT
DBA	ROOT
Printer	ROOT
Security	ROOT
Network	ROOT

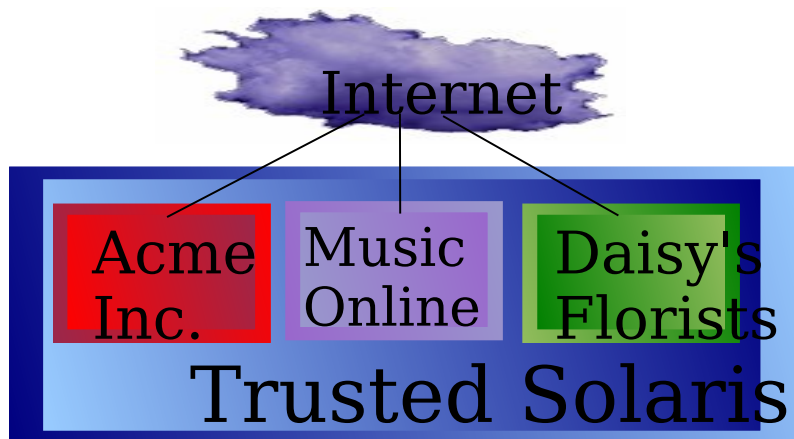
TASK	ROLES
Web	WebAdmin
DBA	DBAdmin
Printer	LpAdmin
Security	SecAdmin
Network	NetAdmin

# MAC and Sensitivity

## Labels

- Flexibility to your organizational structure
- Users cleared at multiple security levels can work on them simultaneously
- Compartmentalization of information is possible with Security labels and MAC thus facilitating server virtualization

Non-hierarchical

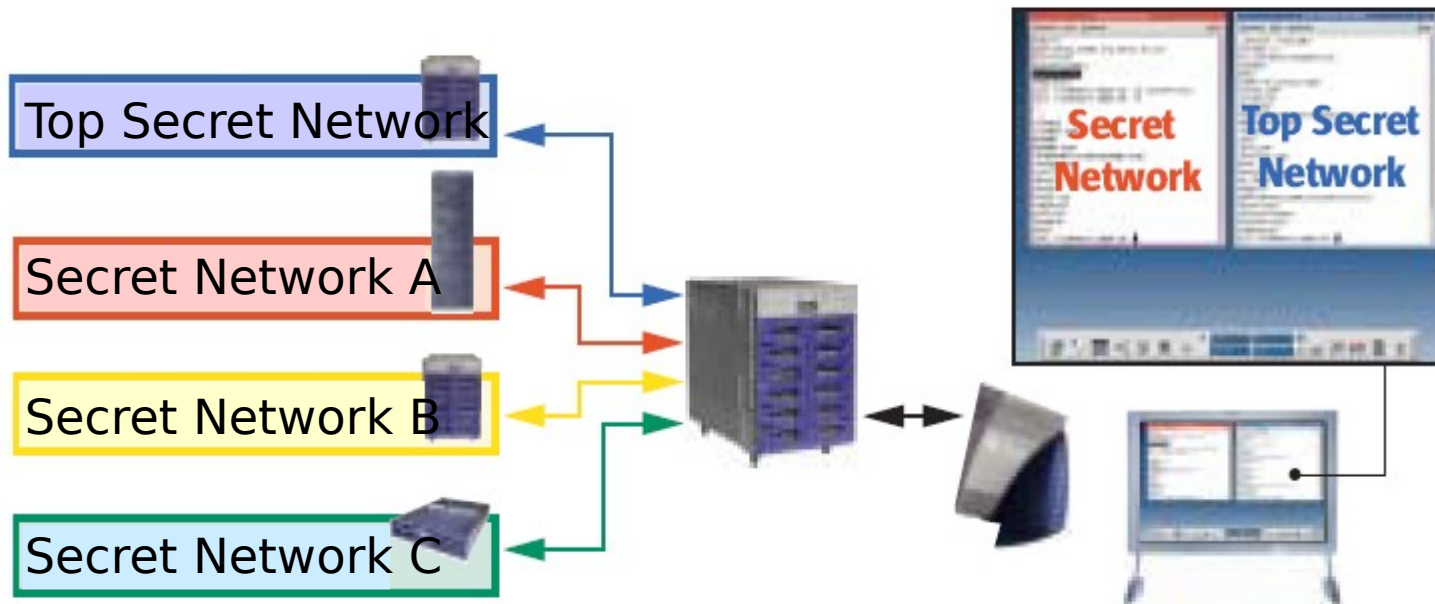


Hierarchical

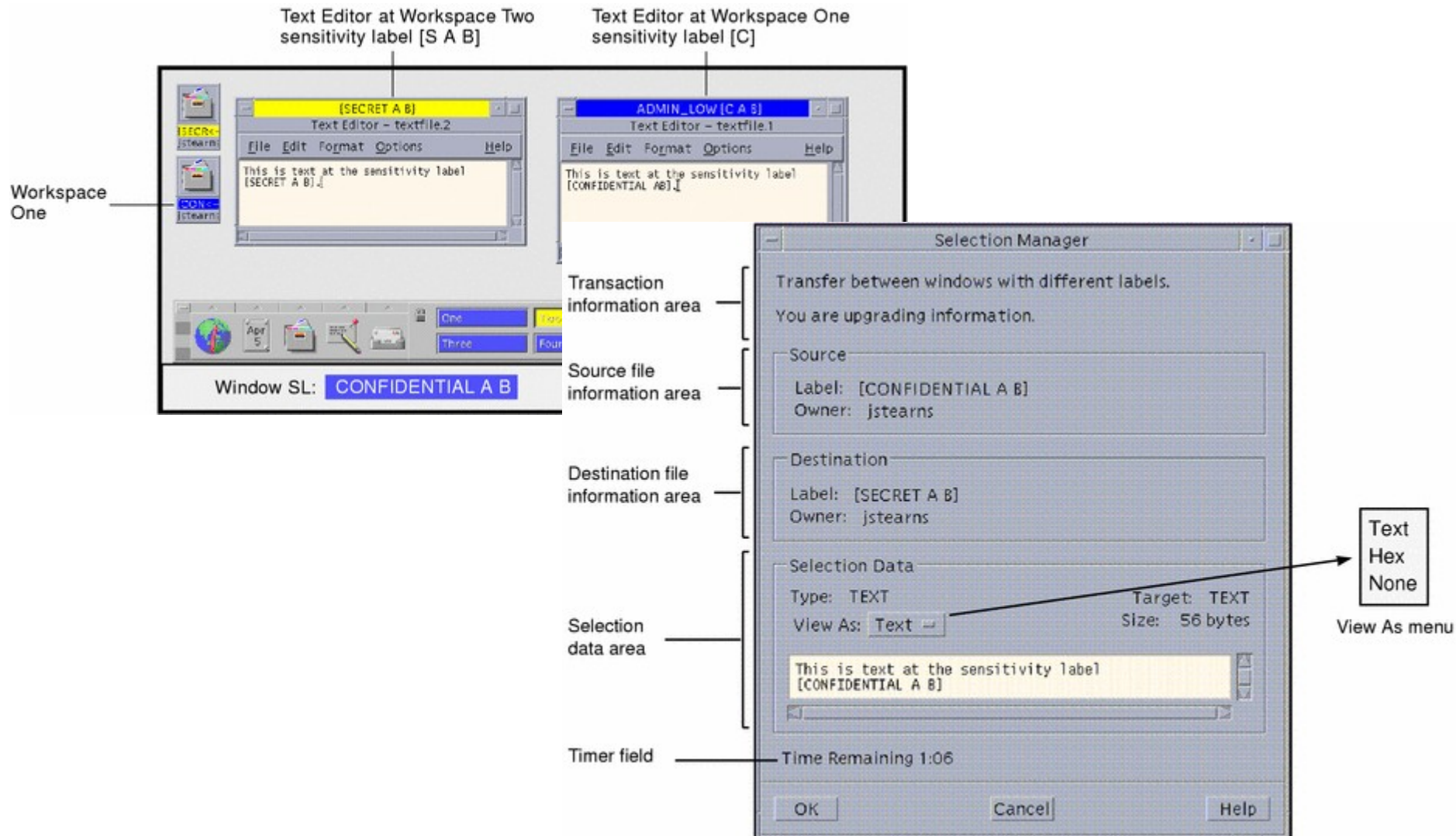


# Trusted Networking

Secure Network Access Platform for Government

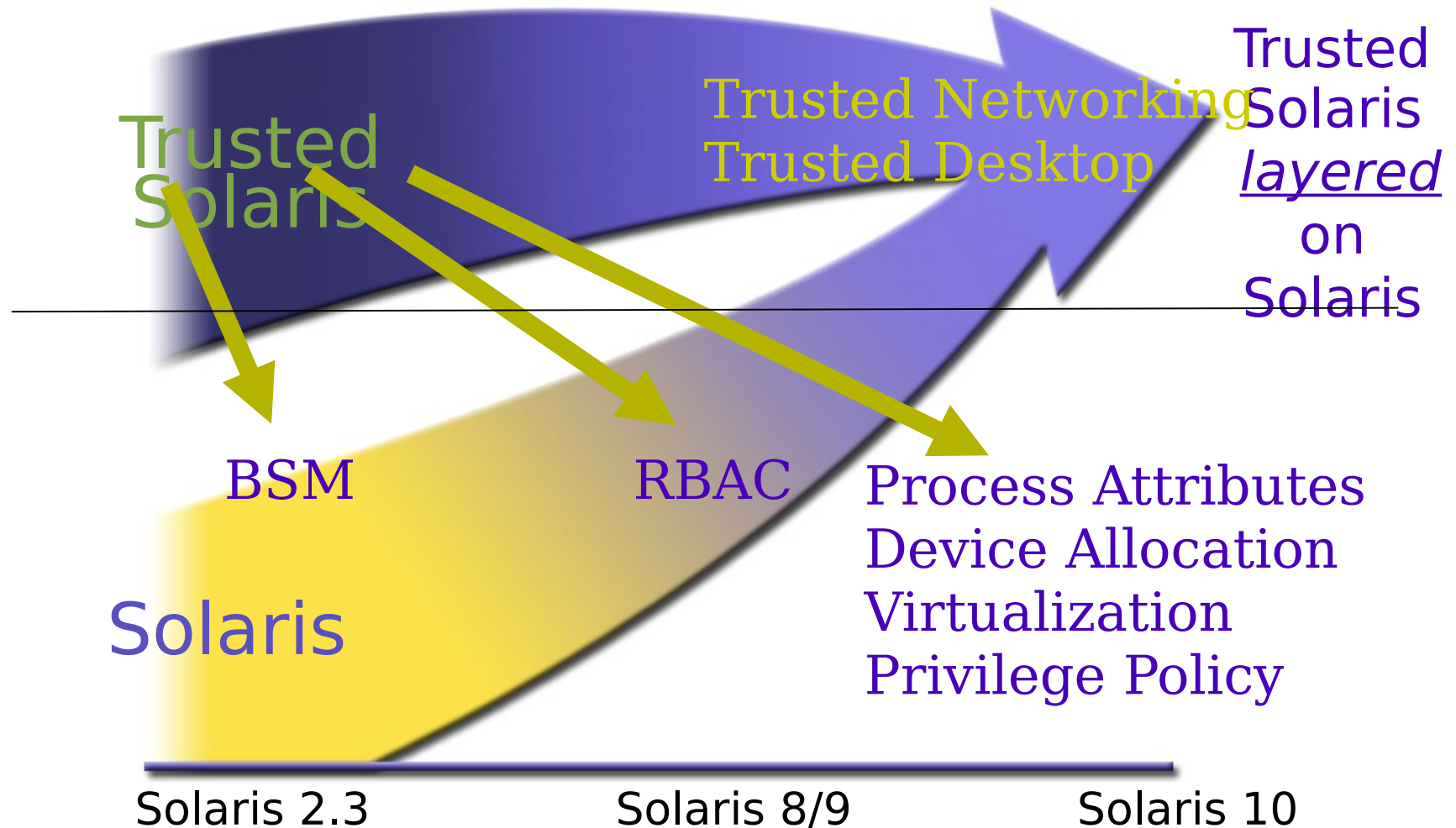


# Restricted Cut and Paste





# Trusted Solaris Direction



# Sun Ray<sup>(TM)</sup> Ultra-Thin Client



Sun Ray<sup>(TM)</sup> 100



Sun Ray<sup>(TM)</sup> 1



Sun Ray<sup>(TM)</sup> 150

- ***Stateless Architecture***
- 10/100 Mb Ethernet
- CD-quality audio I/O
- Composite video input
- Built-in smart card reader
- 24 bit color

# Thin Client Supporting Trends



# Sun Ray for Secure Delivery PC Productivity Tools

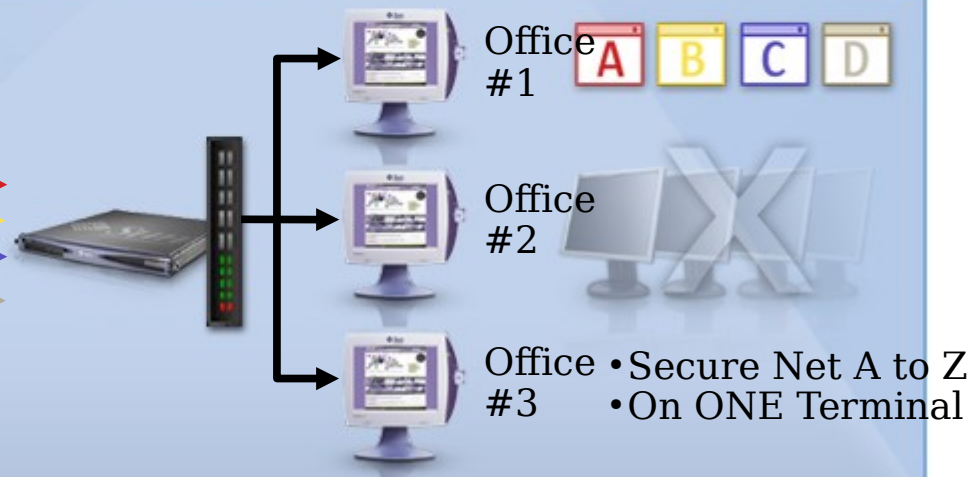
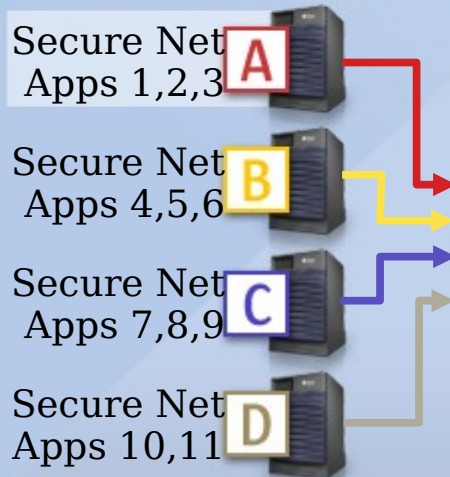


Windows  
PC Server  
with ICA or  
RDP server

ICA or RDP Client to SunRay  
Session Server (same system)



Microsoft Windows Applications



# Benefits of Stateless Computing:

- 25,664 Sun Ray™ Ultra-Thin Client desktops at Sun
- No viruses
- 1 Sys. Admin for every 2000 desktops (an order of magnitude better than current PC support)
- Power savings: \$2.8M/Yr per 25K Sun Ray™ **Appliances**
- Complete deployments in a day
- Zero cost to move or add services
- Zero annual desktop refresh costs
- OS Upgrade: months vs. years
- Instant session, never log out



# High Availability & Scalability:

- Vertical and Horizontally Scalable on SPARC
- Continuous Up-Time
  - Trusted Solaris Bullet proof OS
  - Sun Cluster at the System Level
  - Sun Ray Session Server Fail-Over
  - Server-side Java Applications use J2EE App-Server built-in fail-over mechanisms
- Withstands Rugged Environments
  - Netra for 99.999% NEBS Certified Servers (to 12-way) and NAS Storage
  - OEM options for Sun Ray boards
  - Partners for MIL-SPEC level integration as well





# Summary: Secure Network Access Platform

## It's Value to You:

- Zero-administration desktops
- Customized Desktop Consolidation and Virtualization
- Session Mobility – Access User Virtual Desktop From Anywhere
- Ultra Secure – Java Card<sup>(TM)</sup> based authentication and Trusted Solaris<sup>(TM)</sup> Role based access and auditability
- Network-centric enabled workflow

Secure

Cost  
Reduction

Simplification

Streamlined  
Workflow

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# Thank You!

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